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24 April 2015

Version of attached file:

Accepted Version

Peer-review status of attached file:

Peer-reviewed

Citation for published item:

Gorard, S. (2016) 'The complex determinants of school intake characteristics and segregation, England 1989 to 2014.', Cambridge journal of education., 46 (1). pp. 131-146.

Further information on publisher's website:

<http://dx.doi.org/10.1080/0305764X.2015.1045446>

Publisher's copyright statement:

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The complex determinants of school intake characteristics and segregation, England 1989 to 2014

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Abstract

The extent of between-school segregation, or clustering of disadvantaged students within schools, in England varies depending upon the indicator of interest. For example, the ~~level of and~~ trend over time for segregation by student poverty differs from those for ethnicity or special educational need. Additionally the causes of the level of segregation for any indicator will be different from the causes of changes in that level over time. This new paper uses data for all state-funded schools in England from 1989 to 2014 to identify the possible determinants of segregation. The results are summarised for England and its economic regions, and presented in more detail for local authority areas. The long-term underlying level of segregation of each indicator appears to be the outcome of structural and local geographic factors. However, the annual changes in segregation for most indicators can be explained most simply by changes in the prevalence of each indicator. For example, the UK policy of inclusion has considerably increased the number of students with statements of special needs in mainstream schools, and this has resulted, intentionally, in less segregation in terms of this indicator. Segregation by poverty varies at least partly with the economic cycle. Some of the explanatory factors, such as the global economy or the prevalence of specific ethnic minority groups, are not directly under policy-makers' control. This means that it is the more malleable factors leading to the underlying levels of poverty segregation that should be addressed by any state wanting a fair and mixed national school system. In England, these controllable factors include the use of proximity to decide contested places at schools, and school diversity as represented by the growth of Academies and Free Schools, and the continued existence of faith-based and selective schools.

Introduction

This paper is about the extent to which children of similar social and economic backgrounds are clustered within the same schools, the damage this causes, and the reasons it happens. 'Segregation' between schools is used here as the term for this clustering, because of its traditional use in this way to describe the visible outcome of a process. This paper looks briefly at why segregation matters, and then explains the methods, findings and implications of a new analysis.

Although state-funded schools in England are 'choice' schools in the sense that any family is entitled express a preference to attend any of them, in reality the popularity of some schools means that preference is not the same as choice. Popular schools, or their admissions authorities, use over-subscription criteria such as proximity of home to school to decide who gets contested places (education policy in England more generally is outlined in Harris and Gorard 2014). Because of the segregated nature of

housing in parts of England, children can then turn out to be clustered into particular schools, in terms of a range of characteristics including low attainment, poverty, ethnic origin, immigrant status, disability or learning difficulties. The geography of school place allocation matters (Taylor 2009).

As far as it is possible to tell, given that the most complete indicators of potential disadvantage vary between countries, the stratification of educational opportunities in England is lower than in many comparable countries (Gorard and Smith 2004). Educational outcomes are less stratified by individual background characteristics, such as the OECD index of economic, social and cultural status (OECD 2014). Among the EU28 countries, England has lower outcome stratification than all except Estonia, Finland, Italy, Norway and Sweden, and much lower than in Belgium, France and Germany. There are a number of possible reasons for this, including the still relatively comprehensive nature of the secondary school system in comparison to countries that divide students into tracks from an early age.

Damage caused by segregation

The disproportionate clustering of students within schools in terms of their personal characteristics has been shown to be a matter of concern for a number of reasons (Belfi et al. 2014). International studies illustrate that unequal distribution of resources and the stratification of students between schools by their parental income or immigrant status, all other things being equal, are linked to lower overall attainment (Goldsmith 2011, Condron 2011, 2013, Vasque and Home 2013), and to a larger achievement gap between advantaged and disadvantaged students (Knowles and Evans 2012). The segregation of students is strongly linked to lowered patterns of high school graduation and college enrolment in the US, even after controlling for individual and other school factors (Palardy 2013). The mix of peers in school is linked to these longer-term outcomes but also to wider non-cognitive outcomes such as students' sense of justice (Gorard and See 2013), and to civic knowledge (Collado 2014), and subsequent civic engagement (Hoskins et al. 2014).

The reasons for these outcomes are not hard to find. Lower achievers, and poorer students ~~then~~ tend to have less experienced or less qualified teachers (Kalogrides and Loeb 2013), and poorer facilities in general (Massey and Fischer 2006), leading to worse teaching (Harris and Williams 2012). The school mix of students by socio-economic status (SES) even seems to influence how students are treated within each school (McCoy et al. 2012). Of course, this would only be part of the reason for any SES achievement gap. But putting disadvantaged students together in selected schools ~~simply~~ does not work, creating damage for them and for the system as a whole. Why does such social, economic and educational segregation occur in a developed country like England?

Possible determinants

One of the most obvious reasons why similar children go to schools together is because they live close together, and then go to local schools (Gorard et al. 2003, Camina and Iannone 2013). In fact parental preference for local neighbourhood schools is often greater among disadvantaged and minority families, which exacerbates the kinds of segregation found in urban areas (Jacobs 2013). Any system

of allocating school places, especially contested places in over-subscribed schools, which uses catchments, distance or ease of travel will tend to reinforce patterns of pre-existing residential segregation (Frankenberg 2013). Housing becomes less desirable near highly disadvantaged schools (and vice versa of course), and the process can spiral. The rules for allocating school places can influence where people choose to live (Liebowitz 2014).

The economic cycle and local events such as changes in employment can also be linked to changes in segregation. Areas can become more or less attractive to live in, students can move in and out of state-funded benefits like eligibility for free school meals, and parents can find fee-paying schools more or less affordable. Immigration can increase the number of children from ethnic minorities or with English as their second language. There is an on-going policy of integrating children with special educational needs in mainstream schooling, and a parallel increase in the number of children diagnosed as having a special educational need of any kind (Tomlinson 2012). Schools are also closed d or are merged, and new schools spring up in areas of high demand. Factors such as these can affect the prevalence of any indicator of disadvantage, and/or the distribution of such indicators between schools.

A further problem arises from school diversity, giving families a reason, often a spurious reason, for choosing a school other than its quality or proximity. In the US, new types of school include a range of charter schools (Dobbie and Fryer 2009, Gleason et al 2010, Ni 2012). In Sweden there is a model of 'free' schools (Lindborn 2010). Both groups have been emulated in England by Academies and Free schools since 2000 (Gorard et al. 2013, Gorard 2014). Originally, the Academies were set up both to stop the spiral of decline in existing schools and to improve student results in heavily disadvantaged areas. The schools selected to participate at the outset were among the most disadvantaged and so where they changed their intake as a result of Academisation, this was no threat to local levels of socio-economic segregation between schools. For example, where new Academies ended up taking a smaller share of local free-school-meal (FSM) eligible students than previously, this meant that neighbouring schools had to take more and so the local clustering of poorer children into specific schools would actually reduce.

However, the Academies programme more recently has only been driven by the purported school improvement agenda, and the social justice element is now largely ignored, meaning that almost any school is eligible to convert. Private fee-paying schools, ex-grammar schools, Foundation schools and many others (including primary) have become Academies. And the even newer Free Schools have been set up as Academies from fresh. All of these are clearly nothing like the most disadvantaged schools in their area, and were not in anything like a spiral of decline beforehand. This raises the very real danger of increased local SES segregation between schools, especially if the new Academies also begin to take a smaller share of FSM eligible students like the early ones did (Gorard 2009a). Over time and across political administrations in the UK, their number has grown quickly. By the time of the Schools Census in 2012, there were 1,165 secondary Academies which was more than one third of all state-funded schools in England.

In addition, any school that selects its intake in terms of religion may also tend to increase segregation by ethnic origin (Harris 2012), parental income and education

(Allen and West 2011), or social class (Shepherd and Rogers 2012). Any school that selects students by prior attainment will inadvertently increase segregation by social class because of the well-established association between the social background and attainment. What does the most up-to-date data say about these patterns?

Method

The new findings presented here are based on figures from the Annual Schools Census (ASC) for schools in England from 1989 to 2014. The analysis involves all mainstream state-funded schools taking students of compulsory school age. This is as long as records exist for any individual measures of student disadvantage, and includes around 93% of all school students. Is the data on the other 7% in fee-paying and special institutions is not as complete. Special schools are excluded from analysis, are accounted for in the analysis, but the data on these is not as complete. Pupils at fee-paying schools are assumed, for the most part, not to be eligible for free school meals. The ASC includes the number of full-time equivalent students in each school, the number taking free school meals (labelled FSMt in figures and graphs below), the number known to be eligible for free school meals (FSMe), the number known to have a statement of special educational needs (SENs), or special needs without a statement (SENn), the number known to have English as a second or additional language (ESL), and the number of each known ethnic origin. The precise operational definition of each of these changes very slightly over time, and this affects the perceived prevalence of these indicators (a point picked up later in the paper). FSM is only available for families legally defined as living below a poverty threshold (Gorard 2012). Some students are legally eligible for FSM (FSMe) but not all of these choose to take the meal (FSMt). Ethnic origin is converted for the purposes of this paper into a binary variable based on the number known not to have reported White UK ethnicity (NW). This aggregation is used-necessary because many of the minority ethnic groups are very small and cannot be handled at school-level for so many school, even though it is expected that there will be variation between sub-groups. Each of the above is an indicator of potential disadvantage in education (although some of the very small ethnic minority groups such as Indian and Chinese have high average attainment at school).

The relevant figures for each school in each year were used to calculate what has been termed the Gorard Segregation Index (GS) and the Dissimilarity Index (D) at a national level but for primary and secondary schools separately. Both GS and D indices gave the same substantive answers, as they always do when there is no abrupt change in the level of the underlying indicators. Even when there is an abrupt change it is the GS index that is more strongly invariant to composition (Gorard and Taylor 2002). Therefore, only the GS results are presented here (for a full comparison see Gorard 2009b).

Each school's residual for GS is the absolute value of the result of subtracting the population proportion of all students in each school from the population proportion of potentially disadvantaged students (such as those eligible for FSM) in each school. GS itself is the sum of these residuals for all schools, then divided by two. More formally, $GS = 0.5 * (\sum |F_i/F - T_i/T|)$

Where, for any geographical area:

F_i is the number of disadvantaged children in school i

T_i is the total number of children in school i

F is the total number of disadvantaged children in the region

T is the total number of children in the region.

This provides the proportion of all disadvantaged students who would have to exchange schools in order for all schools to have their 'fair share' of disadvantaged students.

The dataset also has more detailed data on 36 local authority areas. These were selected to be the areas with the highest, lowest and median levels of segregation for each of the six indicators of potential disadvantage (FSMe, FSMt, SENs, SENn, NW, ESL), and the areas with greatest, lowest and median growth in those levels of segregation 1999 to 2012. This allowed in-depth consideration of local figures while retaining variation between the selected authorities. The dataset contained 18 measures of segregation (for 2000, 2012 and the growth over time for each indicator), and 145 potential explanatory variables (such as local unemployment figures) from the Department for Education, and the Office for National Statistics. 'Selective' schools in 2000 include grammar and secondary modern schools, and the small number of City Technology Colleges. 'Community' schools in 2000 include Comprehensives with any age range, and Middle deemed secondary schools. For model-based estimates of unemployment, several figures are missing for Shropshire. The index of multiple deprivation (IMD) is a measure of the level of economic and educational deprivation in any area.

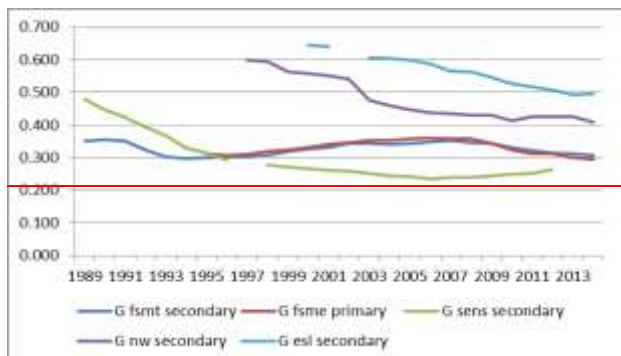
Correlation coefficients (Pearson's R) were calculated for the six measures of segregation with those 145 variables. Only 45 of the latter were retained, as having a correlation of $|0.3|$ or higher with at least one measure of segregation.

National findings

Figure 1 provides a summary of results at the national level for a sample of five indicators that have been published before up to 2011 (Gorard et al. 2013). The figure shows that the results for segregation by take-up and eligibility for free school meals are the same. It also shows that results for primary and secondary schools are the same, where they are available. The remainder of the paper focuses on secondary schools.

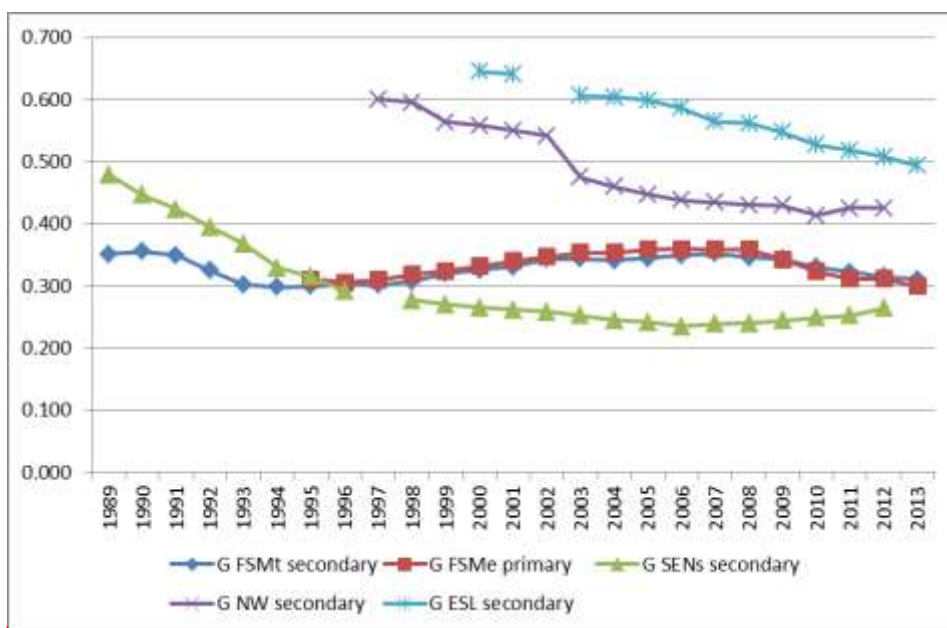
Figure 1 - Segregation indices for five indicators, all schools, England 1989 to 2014

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Note: the data points for each indicator appear only when data is available for that year. For example, eligibility for free school meals (FSMe) was not recorded until 1993.

Figure 1 shows that there are different levels and trends for FSM, special needs, ethnic minorities, and students with English as a second language. This suggests that each indicator has its own determinants. In general, the historical trend for all except FSM has been downwards, with a plateau for some in recent years. They all seem to converge to some extent, and suggest that there is a stubborn underlying level of around 30% segregation or more for all indicators of minority disadvantage. Thus, as well as seeking different determinants for each kind of indicator, it may be necessary to seek separate determinants for the underlying level and for the changes over time.

It is noticeable that there is no consistent, abrupt or delayed change in the patterns here following changes in the legislation about school admissions in 2003 and in 2007. Whatever difference these changes in policy made it seems to be have been marginal in comparison to the other determinants of segregation.

It is unlikely that market forces as represented by parental preferences for schools could lead to these very different trajectories for different indicators but the same trajectories for both primary and secondary sectors. The exception is the period 1990 to 1995 in which all school slowly filled with students who had arrived since the onset of the 1988 Education Reform Act. As previously demonstrated elsewhere, it is likely that increased parental choice as provided by this Act had a brief role in driving down FSM segregation between schools (Gorard et al. 2003). This is so because families in the neighbourhood of desirable schools had no reason to move, whereas families in disadvantaged areas now had the right at least to request a place elsewhere.

Nationally, the figures for the level of segregation using each indicator are not related to the proportion of students educated in the private sector (around 7% in England), nor with changes in the tiny proportion educated in hospitals or Pupil Referral Units. However, the segregation level for each indicator is strongly linked to the prevalence of that indicator in the national school system. As ~~prevalence~~ the number of pupils in any category grows the dispersal of students with that characteristic tends to be more evenly spread between schools (Table 1).

Table 1 – Correlation (R) between level of segregation ~~for any indicator (rows)~~ and ~~the~~ prevalence of ~~that~~ any indicator (columns) in any year, secondary schools, England 1989-2013

Indicator of possible disadvantage	Number of SENs	Number of SENn	Number of NW	Number of ESL	Number of FSMt
<u>Correlation with level of segregation by the same indicator</u> SENs	-0.94	<u>-0.90</u>	<u>-0.93</u>	<u>-0.96</u>	<u>-0.96</u>
Segregation by SENn		<u>-0.90</u>			
Segregation by NW			<u>-0.93</u>		
Segregation by ESL				<u>-0.96</u>	
Segregation by FSMt					<u>-0.80</u>

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The prevalence of any indicator of disadvantage can change because of a change in population for the mainstream school system, such as those caused by increased immigration (affecting the number of non-White UK children and those speaking English as a second language). This means that schools in some areas are taking in a slightly different profile of students. The prevalence can also change due to an improvement or modification in reporting, such as greater sensitivity in spotting special educational needs or in classifying ethnic minority status. Here it is not clear that students are actually moving schools; rather the suggestion is that students are being identified differently in their existing schools. The impact on segregation would ~~be~~ look the same (i.e. it does not matter here whether a FSM-eligible pupil exchanged

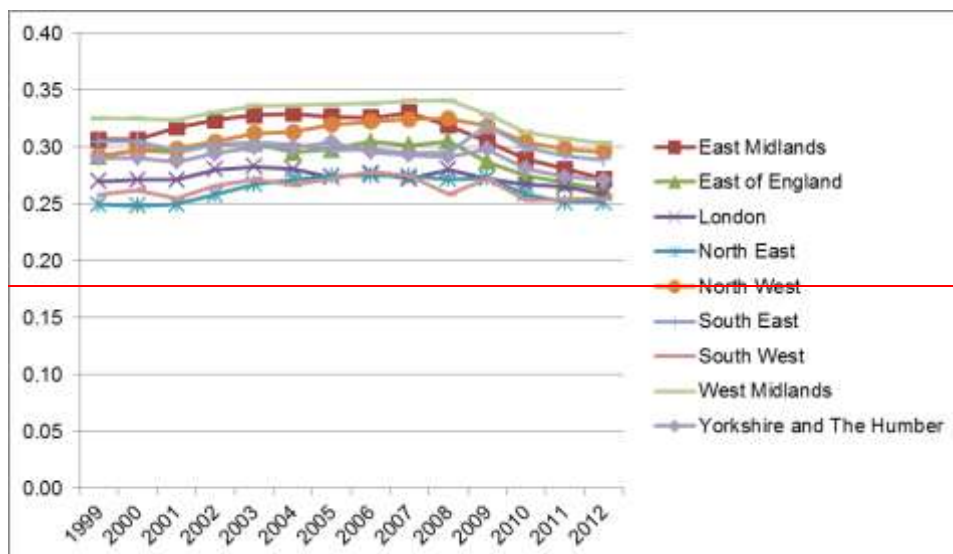
into a new school or whether an existing pupil became FSM-eligible due to a change of circumstances). Given the scale of correlations in Table 1, it is not necessary to look much further for the determinants of changes in segregation by SEN, ethnic origin or first language. The correlation is not due to compositional variance in the index used (Gorard 2009b).

The explanation for changes in segregation by FSM (poverty) is slightly less clear, partly because of its cyclic nature (Figure 1), and because the correlation with prevalence is considerably lower. Here, the explanation is still mostly based on prevalence due to the link ~~with~~ the economic cycle (Cheng and Gorard 2009). However, except in the period 1990 to 1995 segregation by FSM moves in the opposite direction, whperhaps as ere it may be a one-off result of increased parental choice (Gorard et al. 2013).

Regional findings

~~The pattern for FSM eligibility segregation by Economic Region (Figure 2) confirms some of these national findings and also suggests further ideas for the possible determinants of levels of and changes in segregation. The situation is worse in areas like the East or North West where the population density is lowest. It is better in London where houses and schools are closer together, even where the housing is of quite different types, so reducing the impact of residential segregation (Gorard et al. 2003) and where public transport is so much better anyway. Both of these factors will tend to reduce social segregation between schools. Another driver of low segregation could be uniformity among the local population — where nearly everyone is deprived or no one is from an ethnic minority then segregation in terms of those characteristics must be low. This may what is happening in the North East. The highest level of segregation between schools in terms of poverty is in the West Midlands, where the largest authority (Birmingham) retains grammar schools in a selective system, as do nearby areas such as Stoke on Trent, Telford and Wrekin, Walsall, Warwickshire, and Wolverhampton. As shown more forcibly below, selection of students by schools in terms of attainment (or indeed anything else) will tend to drive up socio-economic segregation.~~

~~Figure 2 — FSM eligibility segregation by Economic Region, secondary schools, England, 1999–2012~~



Local findings

The pattern for FSM eligibility segregation at local authority level confirms some of these national findings and also suggests further ideas for the possible determinants of levels of and changes in segregation. Figure 2 illustrates some different local patterns using the six most extreme or average local authorities (LAs). The most segregated area by FSM is Trafford which retains a selective system of grammar and secondary modern schools, and a similar pattern appears in all areas with selective systems, including Birmingham and its neighbouring authorities. As shown more forcibly below, selection of students by schools in terms of attainment (or indeed anything else) will tend to drive up socio-economic segregation.

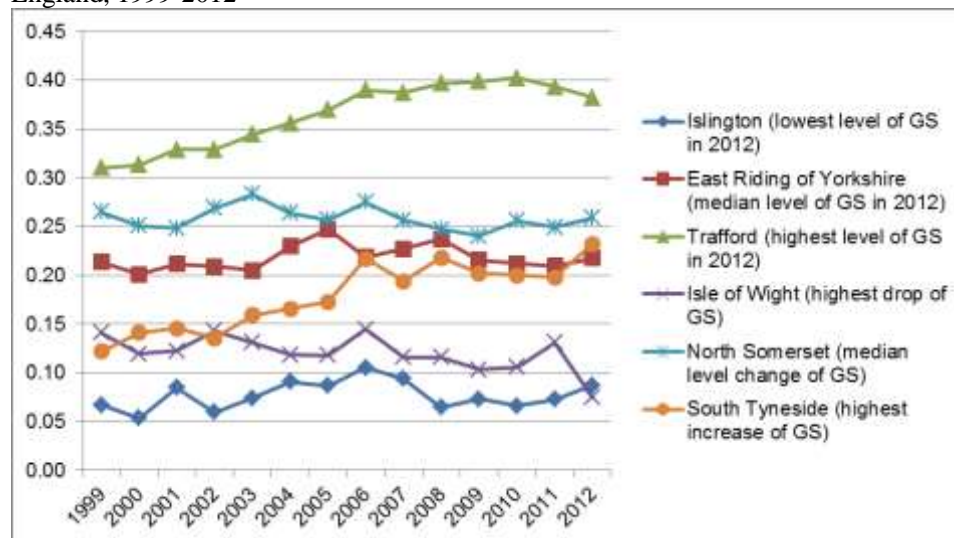
Otherwise, segregation tends to be lower in such densely populated urban areas. Segregation is lowest in London where houses and schools are closer together, even where the housing is of quite different types, so reducing the impact of residential segregation (Gorard et al. 2003). And public transport is better in London than elsewhere, again making mixing of intakes more feasible than in rural areas where school intakes must represent the nature of the surrounding housing. Islington in London has the lowest segregation by FSM in the country, partly due to its high population density. But Islington and other central London Boroughs also may have lower segregation because the users of local schools are more homogeneous than expected, with a high proportion using fee-paying schools or schools in neighboring boroughs. This leaves a rump with high levels of FSM, and so low segregation in terms of FSM.

In contrast, the Isle of Wight (permanent residents) and South Tyneside have low population densities, but segregation remains relatively low. The driver of low segregation here could be uniformity among the local population – where nearly everyone is deprived or no one is from an ethnic minority then segregation in terms of those characteristics must be low.

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Very similar conclusions can be drawn from a consideration of local authority level figures. Figure 3 illustrates this using the six most extreme or average local authorities (LAs). The most segregated by FSM is Trafford which retains a selective system. The Isle of Wight (permanent residents) has a relatively uniform population and low segregation. Islington in London is both high population density, and perhaps has a somewhat uniform school population after the exodus of others to fee-paying schools and to neighbouring LAs. It has the lowest segregation by FSM in the country.

Figure 23 - FSM eligibility segregation by local authority area, secondary schools, England, 1999-2012



Therefore, again, the type of school available (diversity and selection), and the local geography, are linked to levels of segregation, along with the nature of the local school population suggested at a regional level, and the economic cycle suggested at a national level.

Local economy, population and geography

At a local authority level, the different indicators of possible disadvantage have different patterns of correlation between segregation and the potential determinants, reinforcing the idea of different processes of segregation for each indicator. The level of segregation and its growth over time for any indicator also have different patterns of correlation with the potential determinants. This supports the importance of analysing the causes of underlying segregation and the causes of annual changes separately.

The number of people resident in any LA is linked to reduced segregation for all three indicators illustrated (Table 2). Populous areas have reduced all forms of segregation faster than other areas. Areas with high population density also have lower segregation, presumably because families have feasible access to more schools than those in rural areas. Areas with high unemployment or indicators of multiple deprivation have lower levels of FSM and ethnic segregation, but have tended to increase FSM segregation over time. They also have higher levels of SEN

segregation. ~~Areas not controlled by the Labour Party have shown reduced segregation by poverty over time.~~ Many of these measures will, of course, be proxies for others here or as yet not mentioned.

Table 2 - Correlation between local resident characteristics and LA-level segregation figures

	FSMe 2012	FSMe Growth	SENs 2012	SENs Growth	NW 2012	NW Growth
Population 2001		-.34		-.30		-.26
Population 2011		-.35		-.30		-.24
Population density 2011	-.35				-.60	
Unemployment 2011/2012 change	-.21				-.35	
Unemployment 1999/2000 rate	-.34	.31	.30	-.21		
Unemployment Jul 2011 to Jun 2012			.31	-.24		
Unemployment 1999/2000 +/-	-.44	.31	.23		-.22	
Unemployment growth 1999-2011	.41	-.25				
Education and skills IMD score 2010				-.23	.35	
IMD SCORE 2010	-.36	.22		-.28	-.21	
Not Labour control		-.34	-.20			

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Note: FSMe is level of segregation by eligibility for free school meals, SENs is the equivalent for statements of special education need, and NW for non-White UK students. For each indicator the growth is the relative difference between 2012 and 2000.

Note: Tables 2 to 4 only contain variables with a correlation of |0.3| or higher with at least one segregation figure, listed in bold. Correlations of less than |0.2| ~~or less~~ are removed to simplify the table.

Segregation on any indicator is lower in areas of high population density. This has been observed before only for FSM (Gorard et al. 2003). Here segregation by student ethnicity is even more strongly negatively linked to population density. Big cities like London have better transport than anywhere else in England, schools that are closer together and so easier to walk to, and neighbourhoods with both rich and poor housing adjacent. They may also have higher levels of disadvantage. All of these factors would tend to favour the existence of relatively mixed school intakes. Of course, there are exceptions. Big cities like Birmingham could have been like London in many ways, but Birmingham has no underground transport service, only a weak radial rail service, and more 'ghettoisation' of poverty and ethnicity. It also runs a selective grammar school system. All of these factors would tend to favour segregated school intakes segregated by poverty and ethnicity. Similarly, the North East has much lower population density than London but similar levels of segregation. This could be because the levels of disadvantage there are both higher and more uniformly

distributed. There are parts of Middlesbrough in the North East, for example, where no school has less than 50% of students eligible for FSM.

This is confirmed by the finding that areas of greatest unemployment, and highest indicators of multiple deprivation tend to have lower segregation. But they tend to have higher segregation in terms of SEN, perhaps because they have retained more special schools.

Local school population

The number of students in any area is linked to reduced segregation, perhaps for the same reason as populous areas above (Table 3). However, areas with greater growth of student numbers have higher segregation. The level of segregation in any area is strongly linked to the local percentage of students with the relevant indicator of potential disadvantage. The more potentially disadvantaged children there are in any area the lower the level of segregation in 2012. However, areas with the greatest relative growth in the prevalence of any indicator can be the areas with the greatest growth in segregation over time. This needs some explanation.

Table 3 - Correlation between local student characteristics and LA-level segregation figures

	FSM e 2012	FSMeGr owth	SEN s 2012	SENsGr owth	NW 2012	NWGro wth
Number of students 2000	.26	-.44		-.30		-.27
Number of students 2012	.35	-.38		-.27		-.22
Student growth 2000-2012	.30	.25		.26	-.18	.37
FSMe% 2000	-.41	.24			-.36	
FSMe% 2012	-.41	.24				
SENs% 2000	-.41	.26	-.20	.22	-.27	
SENs% 2012		.21	-.35	.30		
SENs growth 2000-2012	.40		.39		.26	
SENnpercent00	-.37					
Non-White% 2000	-.23				-.63	-.26
Non-White% 2012					-.57	
Non-White growth 2000- 2012		.36	.27	.43	.24	.49
ESL% 2000	-.35				-.63	-.21
ESL% 2012	-.27				-.50	

Although areas with larger populations have shown a decline in segregation for all indicators 2000 to 2012, areas with higher and growing segregation have also grown in terms of student numbers. It may be that accommodating more students creates at

least a short-term imbalance in school intakes. Prevalence of any indicator of disadvantage is linked to lower segregation, but increase in that prevalence is linked to an increase in segregation. Again, this could be a short term phenomenon, as schools struggle to find local places for the growing population. This is suggested by the strong link between the percentage of local FSM students in both 2000 and 2012 with segregation in 2012.

Local school types

Some of the strongest associations are between segregation and the types of local schools (Table 4). The proportion of local schools that are controlled by the local authority, comprehensive, or at least not selective is strongly linked to lower levels of, and reduction in, all types of segregation. This is a crucial finding. Particularly problematic schools for levels of segregation are Converter Academies and Grammar schools systems.

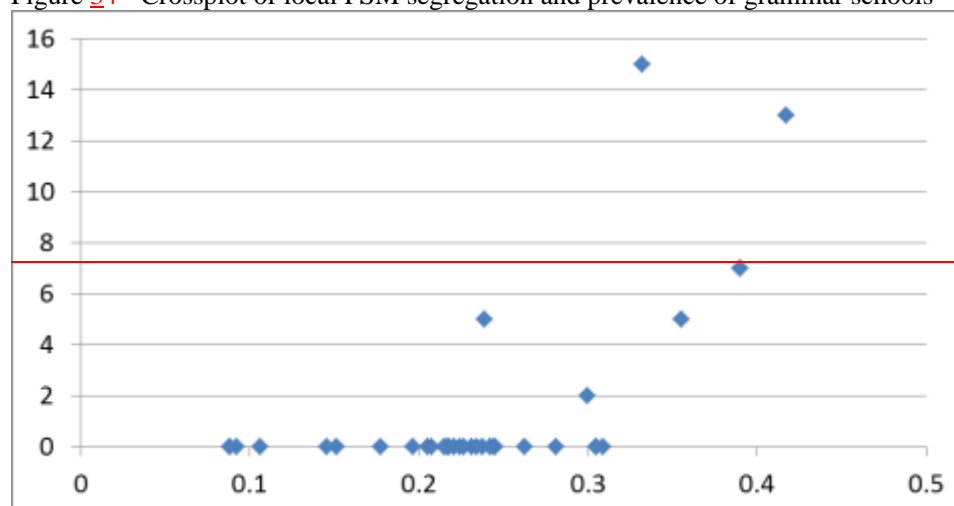
Table 4 - Correlation between local school characteristics and LA-level segregation figures

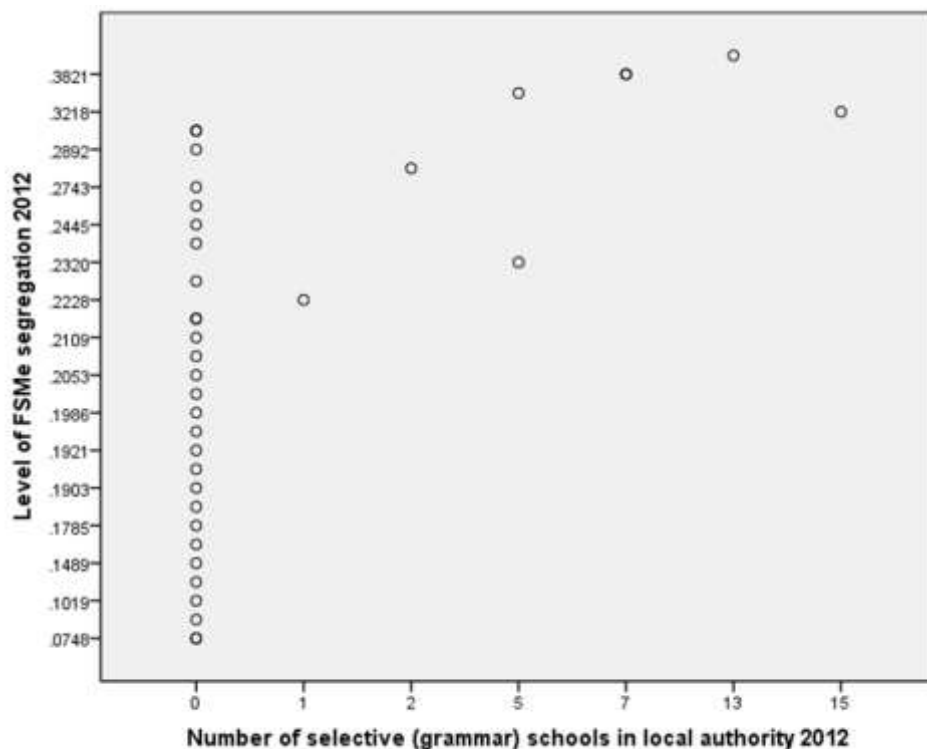
	FSM e 2012	FSMeG rowth	SEN s 2012	SENsGr owth	NW 2012	NWGro wth
Total Institutions 2000	.25	-.37		-.21		-.25
Independent schools 2000	.30	-.21				-.25
'Community' schools 2000	-.25	-.33	-.23			-.20
'Special' schools 2000	.34	-.26		-.24		-.20
'Selective' schools 2000	.54	-.20	.26			
'Community' schools% 2000	-.67		-.29			
Voluntary Aided schools 2012		-.21		-.20	-.22	-.31
Foundation schools 2012	.28	-.36				-.20
Academy Converters 2012	.54		.32		.21	
Selective schools 2012	.62	-.22	.30			
Modern schools 2012	.58		.27			
City Technology Colleges 2012	.34				.31	.31
Community schools 2012			-.38	-.23	.	
Comprehensives 2012		-.21	-.31	-.24		
Total 'Community'	-.29	-.21	-.44	-.26		-.28

2012						
Total Academies 2012	.43		.28			.25
Total Selective 2012	.51		.24			.31
'Community' growth 2000-2012		-.29	-.25	-.40		-.50
'Community'% 2012	-.56	-.21	-.56	-.28		-.38

This is very clear in Figure 34 linking the number of grammar schools in any authority with the level of between-school segregation by poverty. All of the areas with any grammar schools have high segregation (and poorer children are clustered in the non-grammar schools). All of the areas with very low segregation have no grammar schools. It is as simple as that.

Figure 34 - Crossplot of local FSM segregation and prevalence of grammar schools





On the basis of the widespread available measures, it is clear that levels of segregation in any year such as 2012 are linked to a different set of possible determinants than the change in segregation over any time period such as 2000 to 2012. The different indicators of potential disadvantage, such as free school meals and special needs, are also linked to different sets of possible determinants.

The factors discussed so far are largely fixed in the sense that education policy is unlikely to have any impact on them. To make a difference to populations, areas of residence for recent immigrants, transport and housing might be impossible, could be unethical and would anyway take a long time to impact on the local intakes to schools. The most malleable factors identified as associated with segregation relate to the types of schools in each area ~~(as with Birmingham above)~~. Here there are some differences between the indicators. The simplest pattern is for FSM. ~~It is as simple as that -~~ Segregation by poverty is highest in areas with fewest 'bog standard' LA-controlled non-selective schools, and lowest in areas with fewest independent, special, selective, faith-based, Foundation, CTC or Academy schools. The data here, even though looked at over a period of 13 years, cannot demonstrate a causal relationship. But unlike population density the types of schools in existence are directly under policy-makers control. Given that almost any type of diversity of schooling is linked to substantially greater local segregation by poverty, it is probably the diversity itself rather than the specific type of school that is related to segregation.

The change in segregation by poverty over time in Table 3 is intriguing because areas with more ~~LA-controlled non-selective 'bog standard'~~ schools tend to have reduced

segregation, as expected. Areas with CTCs and Academies have increased or maintained their segregation over time, as expected. Almost any diversity, ~~other than the long-standing voluntary aided faith schools,~~ is a problem. However, areas with special, selective, faith-based, or Foundation schools have decreased segregation relative to the overall picture. Perhaps the difference is that the latter school types, despite their clear link to segregation, all pre-existed in 2000, whereas Academies are new and have changed the situation and not for the better. The 15 CTCs, although set up in the 1990s, have mostly converted to become Academies in the 2000s. Perhaps also the areas with selective systems, for example, have been slower to embrace the Academies programme. At least at the outset, the Academies programme was focused on schools in spirals of decline, and at that time these did not include any grammar, Foundation or independent schools.

Discussion of the findings

In England, around 30% of students would have to exchange their schools if SES segregation between schools were to be eliminated. Prior evidence from around the world shows that such segregation is unnecessary, and harmful to students. It is associated with greater unfairness in practice, worse opportunities for the most disadvantaged, lowered aspirations, and lower participation rates in later education. And all of these risks are run for no clear gain.

The quality of education available in a national school system should surely not depend upon where a student lives or which school they attend. Therefore, new school types or schemes for only *some* schools are not the way forward. The poverty gap will more likely be reduced by reducing differences between schools, opportunities and treatments, not by celebrating them. There should therefore be no state-funded *diversity* of schooling. If, for example, Academies in England are really a superior form of school to the 'bog-standard' local comprehensives then all schools should be made into Academies. All students would then be entitled to this better form of education, rather than the state wilfully continuing to provide what they claim (by implication) is an inferior experience for some. In fact, it is not clear that Academies are better than other schools and so the money invested in them could have been used more fruitfully elsewhere. Again, the same could be said about most initiatives that tinker with the types of school available. For the same reason there should be no 11-16 age schools alongside 11-18 schools, or indeed any variation in age range. One of these ranges will be the better for any nation or region as a whole, and should be adopted universally. If it is argued that we do not know which is best then that means we have no reason to vary them (unless for the purposes of a genuine attempt to find out). Similarly, there should be no single-sex and co-educational schools in the same system. Again, one of these forms of schooling will be better for the region as a whole and should be adopted. It means there should be no selection by aptitude or prior attainment within a system that is also compulsory. There should be no differences between schools in terms of their faith-basis, or perhaps no faith-basis at all. There should be no curricular specialisms in the compulsory phase (there should be a truly National Curriculum). All young people should be included in mainstream institutions as far as possible. Controlling the school mix like this is one of the most important educational tasks for central and local governments.

The clustering of students with similar characteristics in particular schools is partly determined by factors outside education, indeed often outside government control even in the medium term. The economic cycle, the nature of regional populations, residential segregation within regions, local population density, quality of public transport (especially in rural areas), and patterns of recent immigration are all determinants of either the level or trend in SES segregation between schools.

Other determinants are quite clearly within education and within government control. The policy of inclusion for children with disabilities and learning challenges and the growth of diagnoses for non-visible disabilities have led to a general decline in segregation by SEN. The allocation of over-subscribed school places in terms of catchments, distance or feeder schools exacerbates or at least retains the impact of existing residential segregation. However, the solution is not individual school lotteries but a solution on an area-wide basis like bussing, banding or local authority lotteries, combined with free travel, for those entitled, to any feasible school rather than simply to the nearest available. The relatively new Pupil Premium policy, where extra funding is given to schools taking disadvantaged students, may help. However, ~~the~~ biggest single controllable factor is the diversity of schooling.

Academies, especially the newer Converter Academies, are strongly linked to local levels of SES segregation between schools. The early evidence is that Free schools have the same pattern. The risk that this poses for societal cohesion and social justice is being run for no reason. There is no evidence that such schools are better than those they replace in terms of attainment (Gorard 2014). The school system in England was designed through its funding, its laws about when and how school places are allocated, regulations about teacher development, inspections, national curriculum, and standard attainment in key stages, to try and make as little difference between schools as possible. England had built a system of maintained schools that was loosely comprehensive, and funded on a per-student basis adjusted for special circumstances. The curriculum was largely similar (the National Curriculum) for ages 5 to 14 at least, taught by nationally-recognised teachers with Qualified Teacher Status, inspected by a national system (OFSTED), and assessed by standardised tests up to Key Stage 3. Education is compulsory for all, and free at the point of delivery. In a very real sense it sounds as though it would not matter much which specific school a student attends, in terms of qualifications as an outcome. And this is perhaps how it ought to be, in a democratic, developed country with an education system like that in England designed to promote equality of opportunity.

~~The quality of education available in a national school system should surely not depend upon where a student lives or which school they attend. Therefore, new school types or schemes for only *some* schools are not the way forward. The poverty gap will more likely be reduced by reducing differences between schools, opportunities and treatments, not by celebrating them. There should be no state-funded *diversity* of schooling. If, for example, Academies in England are really a superior form of school to the 'bog standard' local comprehensives then all schools should be made into Academies. All students would then be entitled to this better form of education, rather than the state wilfully continuing to provide what they claim (by implication) is an inferior experience for some. In fact, it is not clear that Academies are better than other schools and so the money invested in them could have been used more fruitfully elsewhere. Again, the same could be said about most initiatives that tinker with the~~

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Acknowledgements

Rita Hordosy and Beng Huat See assisted in the preparation of the dataset used in this paper.

References

- Allen, R. and West, A. (2011) Why do faith-based schools have advantaged intakes? The relative importance of neighbourhood characteristics, social background and religious identification amongst parents, *British Educational Research Journal*, 37, 4, 631-655
- Belfi, B., Goos, M., Pinxten, M., Verhaeghe, J., Gielen, S., De Fraine, B. and Van Damme, J. (2014) Inequality in language achievement growth? An investigation into the impact of pupil socio-ethnic background and school socio-ethnic composition, *British Educational Research Journal*, 40, 5, 820-846
- Camina, M. and Iannone, P. (2013) Housing mix, school mix: barriers to success, *Journal of Education Policy*, 29, 1, 19-43
- Cheng, SC. and Gorard, S. (2010) Segregation by poverty in secondary schools in England 2006-2009: a research note, *Journal of Education Policy*, 25, 3, 415-418
- Collado, D., Lomos, C. and Nicaise, I. (2014) The effects of classroom socioeconomic composition in student's civic knowledge in Chile, *School Effectiveness and School Improvement*, 10.1080/09243453.2014.966725
- Condon, D. (2011) Egalitarianism and educational excellence: compatible goals for affluent societies?, *Educational Researcher*, 40, 2, 47-55
- Condon, D. (2013) Affluence, inequality, and educational achievement, *Sociological Spectrum*, 33, 73-97
- Dobbie, W. and Fryer, R. (2009) Are high-quality schools enough to close the achievement gap? Evidence from a social experiment in Harlem, *National Bureau of Economic Research Working Paper* 15473
- Frankenberg, E. (2013) The role of residential segregation in contemporary school segregation, *Education and Urban Society*, 45, 5, 548-570

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- Gleason, P., Clark, M., Tuttle, C. and Dwoyer, E. (2010) *The Evaluation of Charter School Impacts: Final Report*, National Center for Education Evaluation and Regional Assistance, ED510574, 259pp
- Goldsmith, P. (2011) Coleman revisited: School segregation, peers, and frog ponds, *American Educational Research Journal*, 48, 3, 508-535
- Gorard, S. (2009a) What are Academies the answer to?, *Journal of Education Policy*, 24, 1, 1-13
- Gorard, S. (2009b) Does the index of segregation matter? The composition of secondary schools in England since 1996, *British Educational Research Journal*, 35, 4, 639-652
- Gorard, S. (2012) Who is eligible for free school meals?: Characterising FSM as a measure of disadvantage in England, *British Educational Research Journal*, 38, 6, 1003-1017
- Gorard, S. (2014) The link between Academies in England, pupil outcomes and local patterns of socio-economic segregation between schools, *Research Papers in Education*,
<http://www.tandfonline.com/eprint/j9Vh5aWRd9ZQn4GTgbTj/full> iFirst
- Gorard, S. and See, BH. (2013) *Overcoming disadvantage in education*, London: Routledge
- Gorard, S. and Smith, E. (2004) An international comparison of equity in education systems?, *Comparative Education*, 40, 1, 16-28
- Gorard, S. and Taylor, C. (2002) What is segregation? A comparison of measures in terms of strong and weak compositional invariance, *Sociology*, 36, 4, 875-895
- Gorard, S., Hordosy, R. and See, BH. (2013) Narrowing the determinants of segregation between schools 1996-2011, *Journal of School Choice*, 7, 2, 182-195
- Gorard, S., Taylor, C. and Fitz, J. (2003) *Schools, Markets and Choice Policies*, London: RoutledgeFalmer
- Harris, N. and Gorard, S. (2014) The Education System of the United Kingdom: Developments post 2008, in Döbert, Hans/Hörner, Wolfgang/von Kopp, Botho/Reuter, Lutz (Eds.) *Education systems of Europe*, Springer Dordrecht Netherlands
- Harris, D. and Williams, J. (2012) The association of classroom interactions, year group and social class, *British Educational Research Journal*, 38, 3, 373-397
- Harris, R. (2012) Geographies of transition and the separation of lower and higher attaining students in the move from primary to secondary school in London, *Transactions*, 10.1111/j.1475-5661.2012.519.x
- Hoskins, B., Janmaat, J., Han, C. and Muijs, D. (2014) Inequalities in the education system and the reproduction of socioeconomic disparities in voting in England, Denmark and Germany, *Compare*, doi: 10.1080/03057925.2014.912796
- Jacobs, N. (2013) Understanding school choice, *Education and Urban Society*, 45, 4, 459-482
- Kalogrides, D. and Loeb, S. (2013) Different teachers, different peers, *Educational Researcher*, 42, 6, 304-316
- Knowles, E. and Evans, H. (2012) *PISA 2009: How does the social attainment gap in England compare with countries internationally?*, Research Report DFE-RR206, London: DFE

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Liebowitz, D. (2014) Does school policy affect housing choices? Evidence from the end of desegregation in Charlotte-Mecklenburg. *American Educational Research Journal*, 51, 4, 671-703

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Lindborn, A. (2010) School choice in Sweden: effects on student performance, school costs and segregation, *Scandinavian Journal of Education*, 54, 6, 615-630

Massey, D. and Fischer, M. (2006) The effect of childhood segregation on minority academic performance at selective colleges, *Ethnic and Racial Studies*, 29, 1, 1-26

McCoy, S., Banks, J. and Shevlin, M. (2012) School matters: how context influences the identification of different types of special educational needs, *Irish Educational Studies*, iFirst 10.1080/03323315.2012.669568

Ni, Y. (2011) The sorting effect of charter schools on student composition in traditional public schools, *Educational Policy*, 26, 2, 215-242

OECD (2014) PISA 2012 results in focus, OECD Publishing, <http://www.oecd.org/pisa/keyfindings/pisa-2012-results-overview.pdf>

Palardy, G. (2013) High school socioeconomic segregation and student attainment, *American Educational Research Journal*, 50, 4, 714-754

Shepherd, J. and Rogers, S. (2012) Church schools shun poorest students, *The Guardian*, 5th March 2012

Taylor, C. (2009) Choice, Competition, and Segregation in a United Kingdom Urban Education Market, *American Journal of Education*, 115, 4, 549-568

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Tomlinson, S. (2012) The irresistible rise of the SEN industry, *Oxford Review of Education*, 38, 3, 267-286

Vasque, J. and Home, J. (2013) Nearly fifty years post-Jim Crow, *Education and Urban Society*, 45, 5, 609-632